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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|------------------------------|------------------------|
| 10/725,302 | 12/01/2003 | David L. Powell | 136089/90 (MHM 15129US01) | 2838 |
| 23446 7590 06/14/2007 MCANDREWS HELD & MALLOY, LTD 500 WEST MADISON STREET SUITE 3400 CHICAGO, IL 60661 | | | EXAMINER CORBETT, JOHN M | |
| | | | ART UNIT 2882 | PAPER NUMBER |
| | | | MAIL DATE 06/14/2007 | DELIVERY MODE PAPER |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/725,302

Applicant(s)

POWELL, DAVID L.

Examiner

John M. Corbett

Art Unit

2882

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

1. Claims 1-10 and 19-29 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to claims 1-2, 4, 19 and 25-26, the term "chilled" is a relative term, which renders the claims indefinite. The term "chilled" is not defined by the claims, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. The Applicant has failed to disclose in their specification a temperature to which a cooling unit needs to cool the liquid in order for it to be considered a "chilled" liquid. For examination purposes, the Examiner takes the position that the "chilled" liquid is one in which the liquid is cooled to a temperature below that of the element to which it is intended to cool. Claims 3, 5-10, 20-24 and 27-29 are rejected by virtue of their dependency.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1, 6-7 and 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Innovative Technology Summary Report (ITSR) in view of Baertsch et al. (20020181654), Burke et al. (5,299,249) and Dilick (20010017908).

With respect to claim 1, ITSR teaches a system, comprising:

an imaging device (Page 2, lines 41-43 and Figures 2 and 14) having a main body (Page 4, lines 6-7 and Figure 1) and an imaging element (Page 2, line 42 and Figure 2); and

an auxiliary module (Page 6, line 13 and Figures 5 and 9) connected to said imaging device (Page 7, lines 2-3 and Figure 7) have a cooling unit configured to cool liquid (Page 8, lines 17-18 and Figure 9, i.e. Haskris water-to-air cooler) and circulate the liquid to said imaging element (Page 8, lines 18-20), wherein the liquid absorbs heat produced by said imaging element (Page 8, lines 18-21).

ITSR fails to teach medical imaging. ITSR fails to explicitly teach configuring to cool liquid to a chilled state and circulating the liquid to and from said imaging element. ITSR fails to explicitly teach removably connecting to said imaging device.

Baertsch et al. teaches medical imaging (Paragraph 4 and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of ITSR to include the medical imaging of Baertsch et al., since imaging for medical and industrial applications are two art recognized equivalents (Paragraph 4)

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as shown by Baertsch et al. and require no more than ordinary skill in the art to substitute. One of ordinary skill in the art would have been motivated to make such a modification to obtain more information to better diagnosis a patient's medical condition (Paragraph 4) as implied by Baertsch et al.

Burke et al. teaches configuring to cool liquid to a chilled state (Col. 4, line 67 - Col. 5, line 2) and circulating the liquid to (Col. 5, line 2) and from (Col. 4, lines 67-68) said imaging element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the chilled liquid and circulation of Burke et al., since a person would have been motivated to make such a modification to remove more heat (Col. 3, lines 16-17) for enabling higher power systems as implied by Burke et al. and to reduce waste.

Dilick teaches removably connecting to said imaging device (Paragraph 60 and Figures 5 and 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the removable connection of Dilick, since a person would have been motivated to make such a modification to more easily perform preventive maintenance on the imaging element (Paragraph 17 and Figure 5) as implied by Dilick.

Note: Removably connected means "capable of being connected and subsequently reconnected" which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

With respect to claim 6, ITSR further teaches wherein said auxiliary module is mobile (Title and Figure 5).

With respect to claim 7, ITSR as modified above suggests the system as recited above. ITSR as modified above fails to explicitly teach permanently affixing to one of a floor and a wall.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above permanent affixation, since permanent affixation and mobility are well known art recognized equivalents for supporting equipment and require no more than ordinary skill in the art to substitute. A person would have been motivated to make the system of ITSR permanently affixed to the floor to increase the stability of the system and reduce the likelihood of inadvertently uncoupling the components by moving the components relative to one another during imaging.

With respect to claim 9, ITSR further teaches wherein said auxiliary module is remotely located from said medical imaging device (Page 8, lines 20-24).

With respect to claim 10, ITSR further teaches wherein said auxiliary module includes a rolling cart that supports said cooling unit (Page 8, line 23 and Figure 9).

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3. Claims 2-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR, Baertsch et al., Burke et al. and Dilick as applied to claim 1 above, and further in view of Klostermann (5,185,774).

With respect to claim 2, ITSR as modified above suggests the system as recited above. ITSR further teaches wherein said imaging element includes an X-ray tube (Page 8, lines 18-21). ITSR as modified above fails to explicitly teach wherein said cooling unit circulates the chilled liquid at least one of over and within said imaging element.

Klostermann teaches wherein said cooling unit circulates the chilled liquid within said imaging element (Col. 9, line 51 - Col. 10, line 4 and Figure 19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the circulating within of Klostermann, since a person would have been motivated to make such a modification to increase power capacities (Col. 1, lines 14-16 and Col. 10, lines 14-17) as taught by Klostermann.

With respect to claim 3, ITSR further teaches a C-arm supported by said main body, wherein said x-ray tube is positioned on an end of said C-arm (Figures 1 and 2).

With respect to claim 4, ITSR as modified above suggests the system as recited above.

Burke et al. further teaches a fluid input line in fluid communication with said cooling unit and said fluid inlet, wherein the chilled liquid is supplied from said cooling unit through said fluid input line (Col. 5, lines 2-3, lines 7-8, and Figure 1); and

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a fluid return line in fluid communication with said cooling unit and said fluid outlet, wherein the chilled liquid is returned to said cooling unit through said fluid return line (Col. 4, line 67 – Col. 5, line 1, Col. 5, line 8, and Figure 1).

ITSR as modified above fails to explicitly teach a cooling duct surrounding at least a portion of said imaging element, said cooling duct having a fluid inlet and a fluid outlet.

Klostermann teaches a cooling duct (316) surrounding at least a portion of said imaging element (Figures 2 and 19), said cooling duct having a fluid inlet (319) and a fluid outlet (321).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the duct and fluid inlet and outlet of Klostermann, since a person would have been motivated to make such a modification to increase power capacities (Col. 1, lines 14-16 and Col. 10, lines 14-17) as taught by Klostermann.

With respect to claim 5, Dilick further teaches removably connecting to said imaging element (Paragraph 60 and Figures 5 and 10).

Note: Removably connected means “capable of being connected and subsequently reconnected” which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

4. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR, Baertsch et al., Burke et al. and Dilick as applied to claim 1 above, and further in view of Yahata et al. (5,226,064).

With respect to claim 8, ITSR as modified above suggests the system as recited above. ITSR as modified above fails to teach a booster battery pack, wherein said booster battery pack is configured to be electrically connected to said medical imaging device in order to provide additional power to said medical imaging device.

Yahata et al. teaches a booster battery pack (5), wherein said booster battery pack is configured to be electrically connected to said medical imaging device (Figures 2 and 3) in order to provide additional power to said medical imaging device (Col. 4, lines 58-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the booster battery pack of Yahata et al., since a person would have been motivated to make such a modification to reduce the demands on a commercial power source thereby reducing overall operating expenses of the system (Col. 1, lines 41-48 and Col. 5, lines 1-11) as taught by Yahata et al.

5. Claim 11-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR in view of Baertsch et al., Yahata et al. and Muchowicz et al. (5,310,361).

With respect to claim 11, ITSR teaches a system, comprising:

an imaging device (Page 2, lines 41-43 and Figures 2 and 14) having a main body (Page 4, lines 6-7 and Figure 1) and an imaging element (Page 2, line 42 and Figure 2); and

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an auxiliary module (Page 6, line 13 and Figures 5 and 9) connected to the imaging device (Page 7, lines 2-3 and Figure 7), wherein said auxiliary module is separate, distinct, and connected directly to said imaging device (Page 8, lines 13-24 and Figure 9).

ITSR fails to teach medical imaging; and

a booster battery pack, wherein said booster battery pack is configured to be electrically connected to the medical imaging device in order to provide additional power to the medical imaging device.

ITSR further fails to explicitly teach removably connecting to said imaging device.

Baertsch et al. teaches medical imaging (Paragraph 4 and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of ITSR to include the medical imaging of Baertsch et al., since imaging for medical and industrial applications are two art recognized equivalents (Paragraph 4) as shown by Baertsch et al. and require no more than ordinary skill in the art to substitute. One of ordinary skill in the art would have been motivated to make such a modification to obtain more information to better diagnosis a patient's medical condition (Paragraph 4) as implied by Baertsch et al.

Yahata et al. teaches a booster battery pack (5), wherein said booster battery pack is configured to be electrically connected to said medical imaging device (Figures 2 and 3) in order to provide additional power to the medical imaging device (Col. 4, lines 58-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the booster battery pack of Yahata et al., since a person would have been motivated to make such a modification to reduce the

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demands on a commercial power source thereby reducing overall operating expenses of the system (Col. 1, lines 41-48 and Col. 5, lines 1-11) as taught by Yahata et al.

Muchowicz et al. teaches removably connecting to said imaging device (Col. 2, lines 48-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the removable connection of Muchowicz et al., since a person would have been motivated to make such a modification to more easily repair or replace a power cable (Col. 4, lines 5-7) as implied by Muchowicz et al.

Note: Removably connected means “capable of being connected and subsequently reconnected” which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

With respect to claim 12, ITSR further teaches wherein the imaging device is an x-ray system (Title) and said imaging element includes an x-ray tube (Figure 5).

With respect to claim 13, ITSR further teaches a C-arm supported by said main body, wherein said x-ray tube is positioned on an end of said C-arm (Figures 1 and 2).

With respect to claim 14, ITSR further teaches wherein said auxiliary module is mobile (Title and Figure 5).

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With respect to claim 15, ITSR as modified above suggests the system as recited above. ITSR as modified above fails to explicitly teach permanently affixing to one of a floor and a wall.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above permanent affixation, since permanent affixation and mobility are well known art recognized equivalents for supporting equipment and require no more than ordinary skill in the art to substitute. A person would have been motivated to make the system of ITSR permanently affixed to the floor to increase the stability of the system and reduce the likelihood of inadvertently uncoupling the components by moving the components relative to one another during imaging.

With respect to claim 16, ITSR further teaches wherein said auxiliary module is remotely located from said main body (Page 8, lines 20-24).

With respect to claim 17, ITSR further teaches wherein said auxiliary module includes a rolling cart that supports (Page 8, line 23 and Figure 9).

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR in view of Baertsch et al., Yahata et al. and Muchowicz et al. as applied to claim 11 above, and further in view of Anderton (Re 35,025).

With respect to claim 18, ITSR as modified above suggests the system as recited above. ITSR further teaches wherein said auxiliary module further comprises a power cable electrically connected (Page 8, lines 20-24 and Figure 5). Muchowicz et al. further teaches wherein said power cable (14) is removably connected (Col. 2, lines 48-52) to a body.

ITSR as modified above fails to teach wherein a main body further comprises a power receptacle electrically connected to a power supply system, wherein said power cable is removably connected to said power receptacle so that the power supply system draws power.

Anderton teaches wherein a main body further comprises a power receptacle (17) electrically connected to a power supply system (Figure 3), wherein said power cable is removably connected to said power receptacle so that the power supply system draws power (Figure 2, interconnect cable).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the power receptacle of Anderton, since a person would have been motivated to make such a modification to improve mobility of the imaging device by disconnecting the power cable during transport and subsequently reconnecting once the imaging device is positioned (Col. 2, lines 68 - Col. 3, line 4) as implied by Anderton.

Note: Removably connected means “capable of being connected and subsequently reconnected” which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

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7. Claims 19-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR in view of Baertsch et al., Burke et al., Yahata et al., Dilick and Muchowicz et al.

With respect to claim 19, ITSR teaches an apparatus comprising:

a cooling unit (Page 8, lines 17-18 and Figure 9, i.e. Haskris water-to-air cooler) configured to cool liquid and circulate liquid to the imaging element (Page 8, lines 18-20), wherein the liquid absorbs heat produced by the imaging element (Page 8, lines 18-20).

ITSR fails to explicitly teach configuring to cool liquid to a chilled state and circulating the liquid to and from said imaging element. ITSR also fails to explicitly teach said auxiliary module being removably connected to said medical imaging device.

ITSR fails to teach medical imaging; and

a booster battery pack, wherein said booster battery pack is configured to be electrically connected to the medical imaging system in order to provide additional power to the medical imaging system.

Baertsch et al. teaches medical imaging (Paragraph 4 and Figure 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of ITSR to include the medical imaging of Baertsch et al., since imaging for medical and industrial applications are two art recognized equivalents (Paragraph 4) as shown by Baertsch et al. and require no more than ordinary skill in the art to substitute. One of ordinary skill in the art would have been motivated to make such a modification to obtain more information to better diagnosis a patient's medical condition (Paragraph 4) as implied by Baertsch et al.

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Burke et al. teaches configuring to cool liquid to a chilled state (Col. 4, line 67 - Col. 5, line 2) and circulating the liquid to (Col. 5, line 2) and from (Col. 4, lines 67-68) said imaging element.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the chilled liquid and circulation of Burke et al., since a person would have been motivated to make such a modification to remove more heat (Col. 3, lines 16-17) for enabling higher power systems as implied by Burke et al. and to reduce waste.

Yahata et al. teaches a booster battery pack (5), wherein said booster battery pack is configured to be electrically connected to said medical imaging device (Figure 3) in order to provide additional power to said medical imaging device (Col. 4, lines 58-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the booster battery pack of Yahata et al., since a person would have been motivated to make such a modification to reduce the demands on a commercial power source thereby reducing overall operating expenses of the system (Col. 1, lines 41-48 and Col. 5, lines 1-11) as taught by Yahata et al.

Dilick teaches removably connecting (cooling) to said imaging device (Paragraph 60 and Figures 5 and 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the removable connection of Dilick, since a person would have been motivated to make such a modification to more easily

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perform preventive maintenance on the imaging element (Paragraph 17 and Figure 5) as implied by Dilick.

Muchowicz et al. teaches removably connecting (power) to said imaging device (Col. 2, lines 48-52).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above the removable connection of Muchowicz et al., since a person would have been motivated to make such a modification to more easily repair or replace a power cable (Col. 4, lines 5-7) as implied by Muchowicz et al.

Note: Removably connected means “capable of being connected and subsequently reconnected” which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

With respect to claim 20, ITSR further teaches wherein the imaging element includes an x-ray tube (Figure 2) and the imaging device is an x-ray imaging system (Figure 14).

With respect to claim 21, ITSR further teaches wherein the x-ray imaging system includes a C-arm having a first and second prong (Figure 6), wherein the x-ray tube is positioned on the first prong, and a detector is positioned on the second prong (Page 7, lines 1-8 and Figures 1 and 6).

With respect to claim 22, ITSR further teaches a cart supporting said power and said cooling unit (Page 8, lines 13-14 and Figure 9), and wherein said cart is mobile (Title).

With respect to claim 23, ITSR as modified above suggests the system as recited above. ITSR as modified above fails to explicitly teach permanently affixing to one of a floor and a wall.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to include in the system of ITSR as modified above permanent affixation, since permanent affixation and mobility are well known art recognized equivalents for supporting equipment and require no more than ordinary skill in the art to substitute. A person would have been motivated to make the system of ITSR permanently affixed to the floor to increase the stability of the system and reduce the likelihood of inadvertently uncoupling the components by moving the components relative to one another during imaging.

With respect to claim 24, ITSR further teaches wherein the auxiliary module is separate and distinct from the imaging device (Figures 5 and 9).

8. Claims 25-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR in view of Burke et al., Klostermann and Dilick.

With respect to claim 25, ITSR teaches a method of cooling the x-ray tube comprising: operatively connecting (Page 8, lines 18-24) an auxiliary module having a cooling unit (Page 8, lines 17-18 and Figure 9, i.e. Haskris water-to-air cooler) to the mobile x-ray device (Title, Page 4, lines 6-7 and Figure 1);

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cooling liquid (Page 8, lines 17-18) with the cooling unit (Page 6, lines 17-18); and passing the liquid from the cooling unit to the x-ray tube (Page 7, line 2, Page 8, lines 17-24 and Figure 5).

ITSR fails to explicitly teach producing chilled liquid and circulating the liquid around at least a portion of the x-ray tube such that the chilled liquid absorbs heat produced by the x-ray tube during an x-ray imaging procedure. ITSR also fails to explicitly teach connecting in a removable fashion.

Burke et al. teaches producing chilled liquid (Col. 4, line 68 - Col. 5, line 2).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of ITSR as modified above the chilled liquid of Burke et al., since a person would have been motivated to make such a modification to remove more heat (Col. 3, lines 16-17) for enabling higher power systems as implied by Burke et al.

Klostermann teaches circulating the chilled liquid around at least a portion of the x-ray tube such that the chilled liquid absorbs heat produced by the x-ray tube during an x-ray imaging procedure (Col. 9, line 51 - Col. 10, line 4 and Figure 19).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of ITSR as modified above the circulating within of Klostermann, since a person would have been motivated to make such a modification to increase power capacities (Col. 1, lines 14-16 and Col. 10, lines 14-17) as taught by Klostermann.

Dilick teaches connecting in a removable fashion (Paragraph 60 and Figures 5 and 10).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of ITSR as modified above the removable connection of

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Dilick, since a person would have been motivated to make such a modification to more easily perform preventive maintenance on the imaging element (Paragraph 17 and Figure 5) as implied by Dilick.

With respect to claim 26, Klostermann further teaches providing a cooling duct (316) around at least a portion of the x-ray tube (Figure 19), wherein said passing includes passing the chilled liquid (Col. 10, lines 1-2) from the cooling unit to the x-ray tube (Col. 10, lines 2-4) through a first tube that is in fluid communication with the cooling unit and the cooling duct (Col. 9, lines 62-66); and

returning the chilled liquid back to the cooling unit through a second tube that is in fluid communication with the cooling unit and the cooling duct (Col. 9, line 66 – Col. 10, line 4).

With respect to claim 27, ITSR as modified above suggests the method as recited above. ITSR as modified above fails to explicitly teach permanently affixing to one of a floor and a wall.

It would have been obvious for one of ordinary skill in the art at the time the invention was made to include in the method of ITSR as modified above permanent affixation, since permanent affixation and mobility are well known art recognized equivalents for supporting equipment and require no more than ordinary skill in the art to substitute. A person would have been motivated to make such a modification to increase the stability of the system and reduce the likelihood of inadvertently uncoupling the components by moving the components relative to one another during imaging.

With respect to claim 28, ITSR further teaches remotely locating the auxiliary module from the x-ray device (Page 8, lines 20-24 and Figures 1, 5 and 9).

9. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over ITSR in view of Burke et al., Klostermann and Dilick as applied to claim 25 above, and further in view of Yahata et al.

With respect to claim 29, ITSR as modified above suggests the method as recited above. ITSR as modified above fails to teach

providing a booster battery pack; and
electrically connecting the booster battery pack to the x-ray device so that the x-ray device draws power from the booster battery pack.

Yahata et al. teaches providing a booster battery pack (5); and
electrically connecting the booster battery pack to the x-ray device (Figure 3) so that the x-ray device draws power from the booster battery pack (Col. 4, lines 58-62).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to include in the method of ITSR as modified above the booster battery pack of Yahata et al., since a person would have been motivated to make such a modification to reduce the demands on a commercial power source thereby reducing overall operating expenses of the system (Col. 1, lines 41-48 and Col. 5, lines 1-11) as taught by Yahata et al.

Response to Arguments

10. Applicant's arguments filed 26 February 2007 have been fully considered but they are not persuasive.

With respect to the 35 U.S.C. 112, second paragraph rejection of claims 1-10 and 19-29, the applicant argues that the term "chilled" is definite. The Examiner disagrees. In response, the Examiner notes that the term chilled is a relative term of degree. The specification nowhere states that the temperature defined by chilled is one that is in fact "cold enough to cause shivering" and "seized with cold". In its broadest interpretation it merely requires a reduction in temperature by any amount and does not need to "cause shivering" and be "seized with cold" as argued by the applicant. Furthermore, the applicant's specification in fact equates chilled with cooled (Page 9, paragraph 23, line 3).

Furthermore, the different definitions from various dictionaries, to which the Applicant and Examiner respectively refer, illustrate the indefiniteness of the word "chilled". What one may consider to be chilled, as illustrated by one dictionary to which the Applicant refers, may not be considered to be chilled by another, such as the other dictionary to which the Examiner refers. Additionally, what one person may consider to be "cold enough to cause shivering" or to be "seized with cold" (i.e., a person from the tropics) may not be considered to be "cold enough to cause shivering" or to be "seized with cold" by another person (i.e., a person from Alaska). There is no standard for ascertaining the requisite degree for a liquid to be in a chilled state. Therefore, "chilled" is a relative term, and it is indefinite as to what constitutes a liquid in a

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“chilled state”. Accordingly, the applicant’s argument is not persuasive and the claims remain rejected.

For purposes of examination, the Examiner has taken the position of “chilled” or “chilling” as “cooled” or “cooling” described in the original specification (Page 9, paragraph 23, line 3) as lowering or reducing in temperature. However, the word “chilled” as recited in the claims is still a relative term that is indefinite.

I. Claim Rejections Under 35 USC § 103(a)

A. Regarding applicant’s arguments that “Claims 1, 6-7, and 9-10 Are Not Obvious”

1. Regarding applicant’s arguments that “There is no suggestion or motivation to combine ITSR with other references”

With respect to claims 1, 6-7, and 9-10, the applicant argues the rejection of the claims employs hindsight reasoning. In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

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With respect to claims 1, 6-7, and 9-10, the applicant argues that “there is no suggestion within the other references or within the knowledge of skill in the art for a person of ordinary skill, when attempting to solve the problem of cooling a medical imaging system, to look to an industrial x-ray system ... [which] is non-analogous art”. The Examiner disagrees. It has been held that a prior art reference must either be in the field of applicant’s endeavor or, if not, then be reasonably pertinent to the particular problem with which the applicant was concerned, in order to be relied upon as a basis for rejection of the claimed invention. See *In re Oetiker*, 977 F.2d 1443, 24 USPQ2d 1443 (Fed. Cir. 1992). In the instant case, Baertsch clearly teaches that x-ray imaging systems are routinely used in both medical and industrial applications (Paragraph 4). Accordingly, one of ordinary skill in the art would have found it obvious to look to the industrial x-ray imaging art to solve a problem in the medical x-ray imaging art.

2. Regarding applicant’s arguments that “The Proposed Combination Of Art Does Not Disclose All Of The Elements Of The Claims”

a) Regarding applicant’s arguments that “Dilick Does Not Disclose ‘an auxiliary module removably connected to said medical imaging device having a cooling unit’”

This argument was not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413,

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208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The secondary reference Dilick was applied under 35 U.S.C. 103(a), not 35 U.S.C. 102. As stated in the 35 U.S.C. 103(a) rejection of claim 1 above, Dilick was relied upon only for teaching removably connecting to said imaging device. ITSR in view of Baertsch et al. and Burke et al. was relied upon for everything else. Accordingly, the combination of references does suggest an auxiliary module (ITSR) removably (Dilick) connected (ITSR) to said medical (Baertsch) imaging device (ITSR) having a cooling unit (ITSR). As a result, the Applicant's arguments are not persuasive. Dilick still applies as prior art and the claims remain rejected.

Furthermore, as noted in the rejection of claim 1 above, removably connected means "capable of being connected and subsequently reconnected" which is not a positive limitation but only requires the ability to so perform. It does not constitute a limitation in any patentable sense.

b) Regarding applicant's arguments that "Burke Does Not Disclose 'a cooling unit configured to cool liquid to a chilled state and circulate the chilled liquid to and from the imaging element'"

The Examiner disagrees. Burke et al. clearly discloses a cooling unit (D - heat exchanger) configured to cool liquid to a chilled state (Col. 3, lines 18-20 and Col. 5, lines 1-2; i.e., "***chilled water***" ***to near its freezing point***) and circulate the chilled liquid to and from (Col. 5, lines 7-9 and Figure 1) the imaging element (the CT apparatus, A, B and C). Therefore, Burke et al. does

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disclose a cooling unit configured to cool liquid to a chilled state and circulate the chilled liquid to and from the imaging element and the claims remain rejected.

B. Regarding applicant's arguments that "Claims 2-5 are not obvious"

The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

C. Regarding applicant's arguments that "Claim 8 Is Not Obvious"

The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

D. Regarding applicant's arguments that "Claims 11-17 Are Not Obvious"

With respect to claims 11-17, the applicant argues, "ITSR is non-analogous art to which a person of ordinary skill in the art would not be led". The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

1. Regarding applicant's arguments that "Yahata Does Not Disclose 'an auxiliary module having a booster battery pack, ... wherein said auxiliary module is separate, distinct, and removably connected directly to said medical imaging device'"

This argument is not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The secondary reference Yahata et al. was applied under 35 U.S.C. 103(a), not 35 U.S.C. 102. As stated in the 35 U.S.C. 103(a) rejection of claim 11 above, Yahata et al. was relied upon only for teaching a booster battery pack (5), wherein said booster battery pack is configured to be electrically connected to said medical imaging device (Figures 2 and 3) in order to provide additional power to the medical imaging device (Col. 4, lines 58-62). ITSR in view of Baertsch et al. and Muchowicz et al. was relied upon for everything else. Accordingly, the combination of references does suggest an auxiliary module (ITSR) having a booster battery pack (Yahata et al.) ... wherein said auxiliary module is separate (ITSR), distinct (ITSR), and removably (Muchowicz et al.) connected (ITSR) directly (ITSR) to said medical (Baertsch et al.) imaging device (ITSR). As a result, the Applicant's arguments are not persuasive. Yahata et al. still applies as prior art and the claims remain rejected.

2. Regarding applicant's arguments that "Muchowicz Does Not Disclose a 'an auxiliary module having a booster battery pack,... wherein said auxiliary module is separate, distinct, and removably connected directly to said medical imaging device'"

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This argument is not persuasive. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

The secondary reference Muchowicz et al. was applied under 35 U.S.C. 103(a), not 35 U.S.C. 102. As stated in the 35 U.S.C. 103(a) rejection of claim 11 above, Muchowicz et al. was relied upon only for teaching removably connecting to said imaging device (Col. 2, lines 48-52). ITSR in view of Baertsch et al. and Yahata et al. was relied upon for everything else. Accordingly, the combination of references does suggest an auxiliary module (ITSR) having a booster battery pack (Muchowicz et al.),... wherein said auxiliary module is separate (ITSR), distinct (ITSR), and removably (Muchowicz et al.) connected (ITSR) directly (ITSR) to said medical (Baertsch et al.) imaging device (ITSR). As a result, the Applicant's arguments are not persuasive. Yahata et al. still applies as prior art and the claims remain rejected.

E. Regarding applicant's arguments that "Claim 18 Is Not Obvious"

The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

F. Regarding applicant's arguments that "Claims 19-24 Are Not Obvious"

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The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

G. Regarding applicant's arguments that "Claims 25-28 Are Not Obvious"

The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

H. Regarding applicant's arguments that "Claim 29 Is Not Obvious"

The Examiner disagrees with the applicant's arguments for the same reasons set forth above.

Applicant should keep in mind the following court decisions when evaluating and considering the proposed combination when evaluating the ordinary skill in the art set forth in an obviousness-type rejection under 35 U.S.C. § 103:

The test for obviousness is not whether the features of one reference may be bodily incorporated into the other to produce the claimed subject matter but simply what the combination of references makes obvious to one of ordinary skill in the pertinent art. *See, In re Bozek*, 163 USPQ 545 (CCPA 1969). *Also, see In re Mapelsden*, 51 CCPA 1123, 329 F.2d 321, 141 USPQ 30 (CCPA 1964), and *In re Henley*, 44 CCPA 701, 239 F.2d 3, 112 USPQ 56 (CCPA 1956). Further, the question in a rejection for obviousness on a combination of references is what the secondary reference would teach one skilled in the art and not whether its structure could be bodily substituted in the basic reference structure. *See, In re Richman*, 165 USPQ 509 (CCPA 1970). Thus, we would note that it is well settled that the test of obviousness is not whether the features of one reference

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can be bodily incorporated into the structure of another and proper inquiry should not be limited to the specific structure shown by the references, but should be into the concepts fairly contained therein, and the overriding question to be determined is whether those concepts would suggest to one skilled in the art the modifications called for by the claims. *See, In re Van Beckum*, 169 USPQ 47 (CCPA 1971). Therefore, the issue lies in what the combination of references makes obvious to the person of ordinary skill and not whether a feature of one reference can be bodily incorporated in the other to produced the subject matter claimed. *See, In re Henley, op. cit.*

Applicant should also keep in mind the following court decisions when evaluating and when evaluating the ordinary skill in the art:

We reach our conclusion further in view of the fact that skill in the art is presumed. *In re Sovish*, 769 F.2d 738, 226 USPQ 771 (Fed. Cir. 1985). The prior art may be properly evaluated for reasonable inferences which one skilled in the art would draw therefrom, and not just for their specific, express teachings. *In re Shepard*, 319 F.2d 194, 197, 138 USPQ 148, 150 (CCPA 1963). Furthermore, artisans must be presumed to know something about the art, apart from what the references disclose. *In re Jacoby*, 309 F.2d 513, 135 USPQ 317 (CCPA 1962). The conclusion of obviousness may be made from common knowledge and common sense of a person of ordinary skill in the art without any specific hint or suggestion in a particular reference. *In re Bozek*, 416 F.2d 1385, 163 USPQ 545 (CCPA 1969). Every reference relies to some extent on knowledge of persons skilled in the art to complement that which is disclosed therein. *In re Bode*, 550 F.2d 656, 193 USPQ 12 (CCPA 1977). And finally, a reference must be considered under 35 U.S.C. § 103 not only for what it expressly teaches but also for what it fairly suggests. *In re Burckel*, 592 F.2d 1175, 201 USPQ 67 (CCPA 1979).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Feldkamp et al. ("Practical cone-beam algorithm") further illustrates x-ray systems for both medical and industrial use (Page 612, Col. 1, lines 6-10 and Page 616, Col. 1, lines 1-4), thus showing that these systems are analogous in the art.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John M. Corbett whose telephone number is (571) 272-8284. The examiner can normally be reached on M-F 8 AM - 4:30 PM.

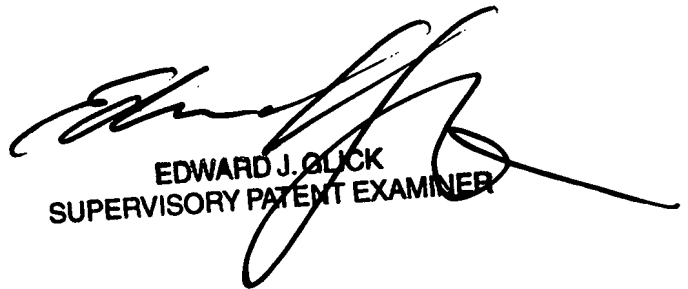
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward J. Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications

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may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

11 June 2007 JMC

A handwritten signature, possibly reading 'JMC', located below the date.A large, stylized handwritten signature of Edward J. Glick.

EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER